REMARKS

Applicant is in receipt of the Office Action mailed December 23, 2003. Claims 1-28 are pending. Claims 1-7, 11, 15-21, and 25 were rejected under 35 U.S.C. 103(a). Claims 8-10, 12-14, 22-24 and 26-28 were objected to as being dependent upon a rejected base claim, but were otherwise stated to be allowable. Applicant respectfully thanks the Examiner for consideration of these claims. Reconsideration of the present case is earnestly requested in light of the following remarks.

§103 Rejections

Claims 1, 4, 15, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent No. 5,903,279, hereinafter "Lee") in view of Ray et al. (U.S. Patent No. 5,673,376, hereinafter "Ray"). This rejection is respectfully traversed.

The Examiner states in the Office Action: "As per claim 1, Lee et al discloses a method for displaying lines on a display device (column 2 lines 28-32), said method comprising: generating a plurality of sample positions (column 2 lines 28-40) in a two-dimensional space (fig 5). . ."

At Col. 2, lines 28-40, Lee teaches and discloses:

"To achieve these and other advantages, and in accordance with the purpose of the invention as embodied and broadly described, the invention related to an antialiasing method for displaying a line on a device including a matrix array of pixels. The method includes the steps of locating a first pixel having a shortest distance along an axis of the matrix array from the line, determining the shortest distance, calculating pixel intensity of the first pixel by multiplying a maximum intensity of the first pixel with a constant value, locating a second pixel having a second shortest distance along the axis from the line, locating a third pixel having a third shortest distance along the axis from the line, calculating pixel

7

intensity for the second pixel, and calculating pixel intensity for the third pixel."

In contrast, Applicant's invention as recited in pertinent part by claim 1 includes ". . . generating a plurality of sample positions in a two-dimensional space, wherein the plurality of sample positions correspond to a pixel . . ." Lee does not teach, suggest, or provide motivation for this feature. As recited above, Lee teaches calculating distances from pixels to a line.

In further contradistinction, Applicant's invention as recited in pertinent part by claim 1 includes ". . .determining a sample normal distance for each of the sample positions with respect to a line in the two-dimensional space. . ." Lee does not teach, suggest, or provide motivation for this feature. Furthermore, Ray does not teach, suggest, or provide motivation for this feature either.

Lee further teaches and discloses that an intensity of the first pixel is a maximum intensity multiplied by a constant, and the intensities of the second and third pixels depend on the distance of the first pixel to the line (Lee col 4, line 53 through col 6, line 9).

In contrast, Applicant's invention as recited in pertinent part by claim 1 includes ". . .assigning a plurality of sample values to said plurality of sample positions based on the sample normal distance of each of said sample positions. . ." Lee does not teach, suggest, or provide motivation for this feature. Furthermore, Ray does not teach, suggest, or provide motivation for this feature either.

Therefore, Applicant respectfully submits that, at least for the reasons presented, claim 1 and its dependents are patentably distinguished over Lee and Ray, whether taken singly or in combination.

Claim 15 includes limitations similar to claim 1, and so the arguments presented above apply with equal force to claim 15. Thus, claim 15 and its dependents are patentably distinguished over Lee and Ray, whether taken singly or in combination.

The Examiner states in the Office Action: "However, Lee et al does not disclose wherein the plurality of sample positions corresponds to a pixel. This is disclosed in Ray et al in column 3 lines 58-62."

Applicant respectfully submits, that a *prima facie* case of obviousness has <u>not</u> been established to reject claim 1 over Lee in view of Ray.

Lee teaches, as shown above, that an intensity of the first pixel is a maximum intensity multiplied by a constant, and the intensities of the second and third pixels <u>depend</u> on the <u>distance of the first pixel to the line</u> (Lee col 4, line 53 through col 6, line 9). Accordingly, Lee uses distances of <u>pixels</u> to a line and <u>not</u> distances of <u>samples</u> to a line. Moreover, Lee does <u>not</u> teach, suggest, or provide motivation for using samples. Therefore, Applicant respectfully submits that there is no motivation to combine Lee with Ray.

Furthermore, Applicant respectfully submits that applying <u>the use of samples</u> in addition to or instead of pixels <u>would change the principle operation</u> of Lee. As the Examiner is certainly aware, the MPEP states in §2143.01 that "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti* , 270 F.2d 810, 123 USPQ 349 (CCPA 1959). . ."

Therefore, at least for the reasons presented, Applicant respectfully submits that a *prima facie* case of obviousness has <u>not</u> been established to reject claim 1 as being unpatentable over Lee in view of Ray. Accordingly, Applicant respectfully submits that claim 1 and its dependents are patentably distinguished over Lee in view of Ray.

Claim 15 includes limitations similar to claim 1, and so the arguments presented above apply with equal force to claim 15. Applicant respectfully submits that for at least the reasons presented above, claim 15 and its dependents are patentably distinguished over Lee in view of Ray.

Claims 2-3 and 16-17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Ray in further view of Law (U.S. Patent No. 6,133,901). This rejection is respectfully traversed.

Law teaches and discloses:

"The integral of the filter profile shown in FIG. 4 is stored as a plurality of samples in a look-up table. The convolution of the line profile with the filter profile is efficiently determined by indexing the look-up table with the lower limit and the upper limit, and retrieving a corresponding upper limit alpha and lower limit alpha." (Law col 8, lines 43-49)

In contrast, Applicant's invention as recited in pertinent part by claim 1 includes ". . .determining a sample normal distance for each of the sample positions with respect to a line in the two-dimensional space . . ." Law does not teach, suggest, or provide motivation for this feature. As presented above, Lee and Ray do not teach, suggest, or provide motivation for this feature. Therefore, Applicant respectfully submits that claim 1 and its dependents are patentably distinguished over Lee, Ray, and Law, whether taken singly or in combination.

Claim 15 includes limitations similar to claim 1, and so the arguments presented above apply with equal force to claim 15. Applicant respectfully submits that for at least the reasons presented above, claim 15 and its dependents are patentably distinguished over Lee, Ray, and Law, whether taken singly or in combination.

Claims 5-7, 11, 19-21, 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Ray in further view of Nakayama et al. (U.S. Patent No. 5,487,142, hereinafter "Nakayama"). This rejection is respectfully traversed.

At Col. 5, lines 41-57, Nakayama teaches and discloses:

"Hence, in this embodiment, the DDA part 3 draws in addition to each drawing pixel which is obtained as a result of the analyzing process of the

DDA, one adjacent pixel which is adjacent to the drawing pixel along the up-and-down direction (vertical or Y-axis direction) or the right-and-left direction (horizontal of X-axis direction). Whether to increase the drawing pixel in the X-axis direction or the Y-axis direction is determined by the slope of the straight line."

"In other words, based on the slope of the straight line obtained by the judging part 2, the drawing pixel is increased in the Y-axis direction if the length of the straight line in the X-axis direction is long (that is, the major axis or the longer axis is in the X-axis direction), and the drawing pixel is increased in the X-axis direction if the length of the straight line in the Y-axis direction is long (that is, the major axis or the longer axis is in the Y-axis direction)."

In contrast, Applicant's invention as recited in pertinent part by claim 1 includes ". . .determining a sample normal distance for each of the sample positions with respect to a line in the two-dimensional space. . ." Nakayama does not teach, suggest, or provide motivation for this feature. As presented above, Lee and Ray do not teach, suggest, or provide motivation for this feature. Therefore, Applicant respectfully submits that claim 1 is patentably distinguished over Lee, Ray, and Nakayama, whether taken singly or in combination. Accordingly, Applicant respectfully submits that, for at least the reason or reasons presented above, claim 1 and those dependent therefrom are allowable.

Claim 15 includes limitations similar to claim 1, and so the arguments presented above apply with equal force to claim 15 as well. Applicant respectfully submits that for at least the reasons presented above, claim 15 is patentably distinguished over Lee, Ray, and Nakayama, taken all singly and in combination.

Applicant also respectfully asserts that numerous ones of the dependent claims recite further distinctions over the cited art. However, since the independent claims have been shown to be patentably distinct, a further discussion of the dependent claims is not necessary at this time.
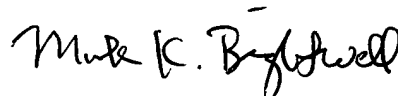
CONCLUSION

In light of the foregoing amendments and remarks, Applicant submits the application is now in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 50-1505/5181-30701/JCH.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

Respectfully submitted,

Mark K. Brightwell
Reg. No. 47,446
AGENT FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert & Goetzel PC
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8800

Date: March 23, 2004